

REMARKS

Reconsideration of the outstanding Office Action is respectfully solicited.

New Claims 60 et seq. are supported by the description at specification page 11 lines 18 and 11-13 and the figures 8 and 9 of the application as filed. The claims relate to a method for the surface treatment of propellant powders (mono-, di- or tri-base propellants) for the ammunition used in barrel weapons. As reflected in Figures 7-9, the propellants granules or grains can be produced with holes or channels; the description at page 11 relates to the particular features of Figures 7-9.

Applicants have attached hereto four photographs [in color], as Figures 1-4, for the Examiner's consideration, along with a translation of the legends. Applicants representatives also have an additional set for further proceedings. Four sheets of photographs (Figures) are attached.

Figure 1 contains a grain [green in color with light blue to grey grounds].

Figure 2 contains a grain which is surface treated in accordance with the invention and a grain which contains holes and is not surface treated; the untreated grain is darker in color than the treated grain which is shiny.

Figure 3 contains a grain which is surface treated in accordance with the invention and a grain which is not surface treated; the untreated grain is blacker in color than the treated grain which is shiny.

Figure 4 is a powder.

The coating in Applicants' case is not in the form of a mixture, but is present as a surface layer on the propellant powder grain and the combustion channels (see enclosed Figures 1 to 3, described above).

The object of the method is the production of propellant powders for which, in a simple manner, a flattening of the maximum gas-pressure curve is achieved in the temperature range allocated to the weapon. Drawings of the application and the results of the Examples show that the effect of Applicants' coating is to improve performance at low and normal temperatures by decreasing the gradient of temperature and pressure. In fact, scrutiny of Figures 1 and 2 reveals that the initial changes at lower temperatures causes a slope difference of positive (for coated granules of the invention) compared to a negative slope (for uncoated granules).

Previous revision of U.S. main Claim 43 emphasizes that the claims refer to the coating of the powder grains shown in the Figures of the application specification. To narrow the issue, Applicants also deleted the dependent claims 44 and 45.

Applicants respectfully traverse the rejection of claims over Willer under 35 U.S.C. 102(b). The PTO advances the following reasons:

'325 teaches compositions of solid propellants **dispersed** in binders, such as hydroxyl-terminated polybutadiene and glycidyl azide polymer (column 6 line 6-col. 7, line 20). It appears that the formulations must have been made by a mixing (i.e. surface-treating) process, such as the one described using PGN [citations omitted] The propellant is dispersed in the binder, and therefore the binder must **coat** the propellant. Therefore, the propellant is "**layered**". [PTO , December 3, 2003, emphasis added]

In applicants' view, two sections of the MPEP are germane to that PTO reasoning: SECTIONS 2131 and 2111.01. The MPEP Section 2131 relates to the disclosure requirements of a reference applied as anticipatory. Therein, the Patent Office policy is to adopt case precedent: an anticipatory reference must describe each and every element of the claim(s) under scrutiny.

Applicants respectfully request withdrawal of the rejection over Willer. Willer does not describe each and every element of the claims 43 et seq. Specifically, as the PTO notes above, the reference does not describe surface treating the granules or grains of any pending claim.

The MPEP Section 2111.01 is controlling here with respect to claim interpretation:

"2111.01 Plain Meaning [R-1]

THE WORDS OF A CLAIM MUST BE GIVEN THEIR "PLAIN MEANING"
UNLESS THEY ARE DEFINED IN THE SPECIFICATION ...

Use of the gerund "surface-treating" is specific and clear; moreover, the substrate recited in the claims is clear. None of the verbs used by the PTO in the reasons for applying Willer is "surface-treating. Moreover, in applicants' view, the different words bolded above are used to accord an interpretation to the reference description, which in accordance with the dictionary usage is unavailable: Applicants rely, for the definition of the words, on THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE [third Edition], Houghton Mifflin Company, which defines the terms as follows:

coat...tr.v. 1.To provide or cover with a coat. 2. To cover with a layer, as
of paint... page 363

Disperse ...5. to distribute (particles) evenly throughout a medium...page
537

Layer...2.a. A single thickness of a material covering a surface or forming an overlying part or segment page 1022

Mix 1. to combine or blend into one mass or mixture...

The word "disperse " is not the same as --surface treating--; nor is the word "mix" the same as surface-treating. This can be seen from the definitions above. There is no reasonable basis for construing --surface-treating-- to be the verb "dispersing" or to be the word "mix" or "mixture"; or at least no reasonable basis is provided in this record.

The method disclosed in column 8 of the Willer reference does not relate to a propellant powder grain surface treatment, as defined in Applicants' claims, and as shown in the enclosed Figures 1 to 4. Rather, the Willer '325 method relates to mixing a powdery ammonium nitrate with other materials. An essential difference between Applicants' claims and Willer '325 is that the ammonium nitrate in Willer is present in a powdery form, as shown in Figure 4, and that, in Willer's case, a material with uniform composition is produced and no surface coating is described or suggested.

Applicants respectfully traverse the rejections of Claims 43 and 51 under 35 U.S.C. 102(b) over Lutz. New claims 60 et seq. and Claim 43 are also novel, as compared to the cited reference to Lutz (U.S. 5,520,757) because this reference discloses a fundamentally different method. The object of the Lutz method is the production of a base material for the propellant powder, and is not directed to the surface treatment for influencing the combustion behavior. Applicants claim the use of nitro ethyl nitramines as surface coating means in different powder formulations. The cited reference does not provide any suggestion to surface-treat propellant powder or propellant grains. Please see column 2 lines 1 et seq, which recites:

"The present invention provides a composition and method of manufacturing mixtures of two or more of the compounds alkyl-NENA and DINA. In one aspect of the the invention relates to the mixtures of these compounds...In another aspect, the invention relates to the formation of colloids of these mixtures with nitro cellulose to provide improves propellants. "

Applicants respectfully traverse the rejections of claims under 35 U.S.C. 103 over O'Meara in view of Lutz. In applicants' view, the combination of the descriptions fails the test set forth in *In re Vaeck*:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The U.S. Patent to O'Meara (5,682,009 – column 1, line 37, *et seq.*) relates to a particulate 10 in which is dispersed a deterrent 16. Suitable deterrents include polyvinyl acetate, polystyrene, polyethylene, polyisoprene, and cellulose acetates. These contain different materials. In addition, O'Meara relates that "to enhance flow, the particulates may be coated with graphite, (column 5, lines 55-60). The structures of Applicants' claims 43, 60 *et seq* do not follow from the O'Meara reference. None of these materials is relevant to Applicants' claims.

Moreover, the Lutz reference does not make up for the deficiencies of the O'Meara reference. The cited reference does not provide any suggestion to surface-treat propellant powder or propellant grains. Please see column 2 lines 1 *et seq*, which recite

"The present invention provides a composition and method of manufacturing mixtures of two or more of the compounds alkyl-NENA and DINA. In one aspect of the the invention relates to the mixtures of these compounds...In another aspect, the invention relates to the formation of colloids of these mixtures with nitro cellulose to provide improves propellants. "

Applicants respectfully request withdrawal of the rejections under 35 U.S.C. 103 as the combination of references fails to describe or suggest [provide motivation or expectation] of the rejected subject matter.

Applicants have noted the Examiner's comments at page 5 first full paragraph of the Office Action concerning Lutz. It appears that there is an error in Claim construction here. The emphasis during examination should focus on claim recitations rather than on a determination of what the claims do not exclude.

Reconsideration of the outstanding Office Action and an early allowance of the application are respectfully solicited.

Respectfully submitted,



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